

U.S.S.N. 10/840,093

Claim Amendments

Please amend claims 1, 9, 13, 14, 16-19 as follows:

Claims as Amended

1. (currently amended) A method for testing a transfer position of a substrate on a substrate support following transfer of said substrate to said substrate support, said substrate support for supporting said substrate during processing, comprising the steps of:

providing a control substrate having first and second alignment marks;

providing said control substrate in a homing position on the substrate support;

providing said control substrate in a test position on the substrate support; and

measuring a displacement between said first alignment mark at said homing position of said control substrate and said

U.S.S.N. 10/840,093

first alignment mark at said test position of said control substrate.

2. (original) The method of claim 1 further comprising the step of measuring a second displacement between said second alignment mark at said homing position of said control substrate and said second alignment mark at said test position of said control substrate.

3. (original) The method of claim 1 further comprising the step of determining a radial orientation shift of said control substrate between said control substrate at said homing position and said control substrate at said test position.

4. (original) The method of claim 3 further comprising the step of measuring a second displacement between said second alignment mark at said homing position of said control substrate and said second alignment mark at said test position of said control substrate.

5. (original) The method of claim 1 wherein said alignment marks are provided in substantially diametrically-opposed relationship to each other on said control substrate. 6. The method of claim

U.S.S.N. 10/840,093

5 further comprising the step of measuring a second displacement between said second alignment mark at said homing position of said control substrate and said second alignment mark at said test position of said control substrate.

7. (original) The method of claim 5 further comprising the step of determining a radial orientation shift of said control substrate between said control substrate at said homing position and said control substrate at said test position.

8. (original) The method of claim 7 further comprising the step of measuring a second displacement between said second alignment mark at said homing position of said control substrate and said second alignment mark at said test position of said control substrate.

9. (currently amended) The method of claim 1 further comprising the steps of:

dividing said substrate support into a cartesian grid;[[,]]

assigning a first pair of homing coordinates for said first alignment mark and a second pair of homing coordinates for said

U.S.S.N. 10/840,093

second alignment mark on said cartesian grid when said control substrate is in said homing position $[1,1]$; and

assigning a first pair of test coordinates for said first alignment mark and a second pair of test coordinates for said second alignment mark when said control substrate is in said test position; and

wherein said measuring a displacement comprises the steps of determining an $X[1/1]$ shift and a Y shift between said first pair of homing coordinates and said first pair of test coordinates for said first alignment mark.

10. (original) The method of claim 9 further comprising the step of measuring a second displacement between said second alignment mark at said homing position of said control substrate and said second alignment mark at said test position of said control substrate.

11. (original) The method of claim 9 further comprising the step of determining a radial orientation shift of said control substrate between said control substrate at said homing position and said control substrate at said test position.

U.S.S.N. 10/840,093

12. (original) The method of claim 9 wherein said alignment marks are provided in substantially diametrically-opposed relationship to each other on said control substrate.

13. (currently amended) A method for testing a transfer position of a substrate on a substrate support, said substrate support for supporting said substrate during processing following transfer of said substrate to said substrate support, comprising the steps of:

providing a control substrate having first and second alignment marks on said control substrate surface;

providing positioning said control substrate in a homing position on the substrate support;

determining first position coordinates for said first and second alignment marks;

providing positioning said control substrate in a test position on the substrate support; and

U.S.S.N. 10/840,093

determining second position coordinates for said first and second alignment marks; and

measuring a displacement between said first alignment mark at said homing position of said control substrate and said first alignment mark at said test position of said control substrate; and

comparing said displacement to a deviation range of acceptable displacements for said substrate position following said transfer.

14. (currently amended) The method of claim 13 further comprising the steps of determining a radial orientation shift of said control substrate between said control substrate at said homing position and said control substrate at said test position and comparing said radial orientation shift to a deviation range of acceptable radial orientation shifts for said substrate position following said transfer.

15. (original) The method of claim 13 wherein said alignment marks are provided in substantially diametrically-opposed relationship to each other on said control substrate.

U.S.S.N. 10/840,093

16. (currently amended) The method of claim 13 further comprising the steps of:

dividing said substrate support into a cartesian grid, assigning a first pair of homing coordinates for said first alignment mark and a second pair of homing coordinates for said second alignment mark on said cartesian grid when said control substrate is in said homing position, said first and second pair of homing coordinates comprising said first position coordinates[1,1]; and

assigning a first pair of test coordinates for said first alignment mark and a second pair of test coordinates for said second alignment mark when said control substrate is in said test position, said first and second pair of test coordinates comprising said second position coordinates; and

wherem said measuring a displacement comprises the steps of determining an X[1/1] shift and a Y shift between said first pair of homing coordinates and said first pair of test coordinates for said first alignment mark.

U.S.S.N. 10/840,093

17. (currently amended) A method for re-calibrating a homing position of a substrate on a substrate support, said homing position comprising a desired processing position for said substrate following transfer of said substrate to said substrate support, comprising the steps of:

providing positioning a control substrate in said homing position on said substrate support to determine first positioning coordinates;

providing positioning said control substrate in a test position on said substrate support to determine second positioning coordinates;

determining a substrate positioning shift comprising a displacement of said first and second positioning coordinates with respect to one another, said displacement comprising a center shift between a center of said control substrate at said homing position and said center of said control substrate at said test position; and

re-calibrating said homing position to achieve said desired processing position following said transfer using said

U.S.S.N. 10/840,093

control substrate center shift.

18. (currently amended) The method of claim 17 further comprising the steps of:

dividing said substrate support into a cartesian grid[1,1];

assigning a pair of homing center position coordinates to said center of said control substrate at said homing position of said control substrate[1,1], said pair of homing center position coordinates comprising said first position coordinates; and

assigning a pair of test center position coordinates to said center of said control substrate at said test position of said control substrate, said pair of test center position coordinates comprising said first position coordinates; and

wherein said substrate center shift is determined using said pair of homing center position coordinates and said test center position coordinates.

19. (currently amended) The method of claim 18 further comprising the steps of:

U.S.S.N. 10/840,093

providing first and second alignment marks on said control substrate[,]];

assigning a first pair of homing coordinates for said first alignment mark and a second pair of homing coordinates for said second alignment mark on said cartesian grid when said control substrate is in said homing position[,], said first and second pair of homing coordinates comprising said first position coordinates; and

assigning a first pair of test coordinates for said first alignment mark and a second pair of test coordinates for said second alignment mark when said control substrate is in said test position, said first and second pair of test coordinates comprising said first position coordinates; and

wherein said test center position coordinates are determined using said first pair of homing coordinates, said first pair of test coordinates, said second pair of homing coordinates, and said second pair of test coordinates.

20. (original) The method of claim 19 further comprising the step

U.S.S.N. 10/840,093

of determining a radial orientation shift of said control substrate between said control substrate at said homing position and said control substrate at said test position and wherein said test center position coordinates are determined using said first pair of homing coordinates, said first pair of test coordinates, said second pair of homing coordinates, said second pair of test coordinates and said radial orientation shift.